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Your petitioner, **STEVEN D. MOORE**, a citizen of the United States and a resident of the city of Liberty, State of North Carolina, whose post office address is 10502 Highway 49 South, Liberty, North Carolina 27298, prays that Letters Patent may be granted to him for improvements in a **TRAILER HITCH ASSEMBLY AND METHOD** as set forth in the following specification.

TRAILER HITCH ASSEMBLY AND METHOD

FIELD OF THE INVENTION

The invention herein pertains to hitch assemblies for trailers and includes a hitch catch which can be removed from the trailer tongue and the tongue locked to prevent unauthorized towing.

DESCRIPTION OF THE PRIOR ART AND OBJECTIVES OF THE INVENTION

Boat owners and others who use trailers for various items are faced with a dilemma once they uncouple the trailer from the towing vehicle. Trailers both loaded and empty are often stolen or moved by unauthorized persons that simply connect the trailer tongue to a suitable hitch on their vehicle and drive away with the trailer. This is a frequent occurrence during fishing tournaments and other times when large numbers of trailer owners gather for competitive events. Many thousands of dollars in personal property is lost as trailer owners have their trailers and other belongings stolen.

Thus, based on the problems and disadvantages of conventional trailer hitch assemblies the present invention was conceived and one of its objectives is to provide a trailer hitch assembly which can be disabled by removing part of the assembly from the trailer and storing it in a safe location.

It is another objective of the present invention to provide a trailer tongue in which a hitch catch can be easily inserted or removed as desired.

It is yet another objective of the present invention to provide a tongue lock which will prevent insertion of a hitch catch by unauthorized persons.

It is a further objective of the present invention to provide a hitch catch which will couple in a conventional manner with a standard ball hitch on a truck or other vehicle.

Various other objectives and advantages of the present invention will become apparent to those skilled in the art as a more detailed description is set forth below.

SUMMARY OF THE INVENTION

The aforesaid and other objectives are realized by providing a hitch assembly formed by modifying a standard tongue on a trailer so it will receive a hitch catch having a tubular body and ball catch. The tongue is provided with a reinforced end and apertures for coincidental alignment with apertures in the tubular body of the hitch catch for reception of pins placed therein. By removing the pins the hitch catch can be removed from the tongue and with the hitch catch removed the trailer cannot be coupled to a vehicle having a ball type hitch. To prevent unauthorized insertion of a similar hitch catch, a

tongue lock is provided which can be positioned in the tongue when the hitch catch is removed. A removable key is used in the lock mechanism to rotate and secure the lock within the tongue. Upon needing the trailer for towing, the owner simply inserts the key, rotates the lock mechanism to unlock it from the tongue and removes the tongue lock therefrom. Next, the hitch catch is inserted into the tongue and is pinned in place through the provided apertures. The towing vehicle with a ball hitch can then be coupled to the trailer as usual and the trailer towed to its desired destination.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 illustrates a side view of a trailer with the hitch catch exploded therefrom for attachment to a pickup truck;

Fig. 2 shows a top view of the trailer and the hitch assembly as seen in Fig. 1 before insertion of the hitch catch into the tongue;

Fig. 3 demonstrates an enlarged view of the hitch catch positioned inside a modified, fragmented tongue;

Fig. 4 features the modified tongue as in Fig. 3 before insertion of the hitch catch;

Fig. 5 depicts the tongue as seen in Fig. 4 with the tongue lock in place;

Fig. 6 shows a side view of the tongue lock with the key removed therefrom;

Fig. 7 pictures a front view of the tongue lock within the tongue in a locked posture;

Fig. 8A depicts a rear view of the tongue lock in an unlocked position generally along lines 8-8 of Fig. 5; and

Fig. 8B demonstrates the tongue lock as shown in Fig. 8A in a fully locked position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT AND OPERATION OF THE INVENTION

For a better understanding of the invention and its operation, turning now to the drawings, Fig. 1 demonstrates trailer 21 which may be built for hauling small boats (not seen) or the like having a frame 11 formed of steel, aluminum or other suitable materials. Trailer 21 as seen in Fig. 2 can be for example, a conventional trailer modified for use with preferred hitch assembly 10 including tongue 12 with reinforced end 30 and hitch catch 13. Hitch catch 13 consists of a steel tubular body 14 sized to slide within steel tubular tongue 12. Standard steel ball catch 15 is attached to tubular body 14 such as by welding or the like. As seen in Fig. 1, apertures 18, 18' of hitch catch 13 and apertures 19, 19' of tongue 12 can be aligned to allow pins 16, 16' to be positioned therein for retaining

hitch catch 13 within tongue 12. Ball catch 15 is a standard ball catch as used with conventional truck ball hitch 17 on typical pickup truck 20, shown fragmented in Fig. 1.

In Fig. 3, tongue 12 is shown in fragmented fashion having hitch catch 13 positioned therein with pins 16, 16' in place to maintain hitch catch 13. In Fig. 4 fragmented tongue 12 is shown with hitch catch 13 removed.

As shown in Fig. 5 tongue lock 22 is positioned in tongue 12 to prevent unauthorized placement of hitch catch 13 therein. Tongue lock 22 includes lock mechanism 28, lock arms 27, 27' and key channel 24 for receiving key 23. In Fig. 6, tongue lock 22 is shown in a side elevational view with key 23 removed from key channel 24. Shown in Fig. 7, tongue lock 22 is in a locked position within tongue 12, having lock arms 27, 27' extending through arm openings 29, 29' of tongue 12.

In Fig. 8A, generally along lines 8-8 in Fig. 5, lock arms 27, 27' are shown in an unlocked position. In Fig. 8B, lock arms 27, 27' have been extended and pass through arm openings 29, 29' of tongue 12 as also seen in Fig. 7. Reinforced end 30 of tongue 12 prevents access to openings 29, 29' and lock arms 27, 27' for security purposes. As would be understood, lock mechanism 28 is rotatable by the insertion of key 23 as shown in Fig. 6. Upon rotation, lock arms 27, 27' extend through respectively arm openings 29, 29' of tongue 12 to maintain lock 22 within tongue 12. When lock 22 is in place in tongue 12,

hitch catch 13 cannot be placed therein, thus providing security to the trailer owner. When the owner decides to use trailer 21, key 23 is inserted into key channel 24 and lock mechanism 28 is rotated to draw lock arms 27, 27' from openings 29, 29' respectively, whereby lock 22 can then be manually removed from tongue 12. Hitch catch 13 is then placed within tongue 12, pins 16, 16' inserted whereby trailer 21 can then be coupled to ball hitch 17 of pickup truck 20 and secured thereto with a security chain or otherwise as usual.

Variations of the illustrated embodiments are anticipated and may include other types of truck to trailer coupling configurations, other than the preferred hitch catch and standard ball hitch shown. Also, other tongue shapes and designs may also be used. Thus, the illustrations and examples provided herein are for explanatory purposes and are not intended to limit the scope of the appended claims.